Amendments to the Claims

Please amend Claims 1 and 11 to read as follows.

1. (Currently amended) A printing apparatus for printing an image on a printing medium while relatively moving at least one of a printing head provided with an array of a plurality of printing elements and the printing medium, said apparatus comprising:

a carriage mounting said printing head, and movable relative to the printing medium in a scanning direction crossing said array of said plurality of printing elements;

detection means mounted on said carriage for detecting printing positions of an array of printed pixels corresponding to said array of said plurality of printing elements, said detecting means detecting printed pixels printed by any of said plurality of printing elements;

determining means for determining all of the printing elements from among said plurality of printing elements that have displacement amounts of printing positions of corresponding printed pixels from a printing position of a printed pixel corresponding to one end side of said array of printing elements equal to or greater than a predetermined amount; and

control means for adjusting drive timing of said plurality of printing elements according to detection results of said detection means so as to make printing positions of subsequently printed pixels close to a predetermined center position, said control means adjusting the drive timing of all of said printing elements determined by said

determining means, so that a deviation amount between printing positions of printed pixels corresponding to the one end side and the other end side of said array of printing elements is equal to or smaller than the predetermined amount, said control means not adjusting the drive timing of a plurality of printing elements that are positioned continuously from a printing element positioned at the one end side of said array of printing elements and that have displacement amounts of printing positions of corresponding printed pixels from the printing position of the printed pixel corresponding to the one end side of said array of printing elements less than the predetermined amount, and said control means adjusting the drive timing of any of printing elements that are positioned continuously from a printing element positioned at the other end side of said array of printing elements and that have displacement amounts of printing positions of corresponding printed pixels from the printing position of the printed pixel corresponding to the one end side of said array of printing elements equal to or greater than the predetermined amount,

wherein all of said printing elements determined by said determining means exclude the one end side of said array of printing elements.

2. (Previously presented) The printing apparatus as claimed in Claim 1, wherein said control means adjusts the drive timing of said plurality of printing elements so as to make deviation amounts of the printed pixels in the scanning direction to be equal or less than one of the printed pixels in size.

3. (Previously presented) The printing apparatus as claimed in Claim 1, wherein said printing head is replaceably mounted on said carriage, and said detection means is mounted fixedly on a predetermined position of said carriage.

4. (Previously presented) The printing apparatus as claimed in Claim 1, further comprising:

moving means for moving said carriage in a primary scanning direction; and

transportation means for transporting the printing medium in a secondary scanning direction crossing the primary scanning direction.

5. (Previously presented) The printing apparatus as claimed in Claim 1, wherein said plurality of printing elements of said printing head are arranged in a direction crossing the scanning direction when said printing head is mounted on said carriage; and

said detection means has a plurality of detection elements arranged at predetermined positions of said carriage so as to be arranged along a specified direction crossing the scanning direction.

Claim 6 (cancelled)

7. (Previously presented) The printing apparatus as claimed in Claim 1, wherein said detection means is movable with a plurality of printing heads, and is

provided commonly to said plurality of printing heads so as to detect images printed by respective printing heads of said plurality of printing heads; and

said control means controls said plurality of printing heads according to detection results of said detection means.

8. (Previously presented) The printing apparatus as claimed in Claim 1, wherein said detection means comprises a light source for irradiating light to the printing medium and a photoelectric conversion device for receiving reflected light from the printing medium.

9. (Previously presented) The printing apparatus as claimed in Claim 1, wherein said printing head is an ink-jet printing head provided with said plurality of printing elements, which are capable of ejecting ink.

10. (Previously presented) The printing apparatus as claimed in Claim 9, wherein said printing elements of said ink-jet printing head comprise electrothermal converters for generating thermal energy as ink ejection energy.

11. (Currently amended) A printing method for printing an image on a printing medium while relatively moving at least one of a printing head provided with an array of a plurality of printing elements and the printing medium, comprising the steps of:

relatively moving at least one of the printing head and the printing medium in a scanning direction crossing the array of the printing elements so that an array of printed pixels corresponding to the array of the printing elements is printed on the printing medium;

detecting printing positions of the array of printed pixels by detecting printed pixels printed by any of the plurality of printing elements;

determining all of the printing elements from among the plurality of printing elements that have displacement amounts of printing positions of corresponding printed pixels from a printing position of a printed pixel corresponding to one end side of the array of printing elements equal to or greater than a predetermined amount; and

adjusting drive timing of the plurality of printing elements according to detection results of the printing positions so as to make printing positions of subsequently printed pixels close to a predetermined center position, wherein said adjusting step adjusts drive timing of all of the printing elements determined in said determining step, so that a deviation amount between printing positions of printed pixels corresponding to the one end side and the other end side of the array of printing elements is equal to or smaller than the predetermined amount,

wherein the drive timing of a plurality of printing elements that are positioned continuously from a printing element positioned at the one end side of the array of printing elements and that have displacement amounts of printing positions of corresponding printed pixels from the printing position of the printed pixel corresponding to the one end side of the array of printing elements less than the predetermined amount is

not adjusted, and the drive timing of any of printing elements that are positioned continuously from a printing element positioned at the other end side of the array of printing elements and that have displacement amounts of printing positions of corresponding printed pixels from the printing position of the printed pixel corresponding to the one end side of the array of printing elements equal to or greater than the predetermined amount is adjusted, and

wherein all of the printing elements determined in said determining step exclude the one end side of the array of printing elements.